AMENDMENTS TO THE CLAIMS

1. (Withdrawn) Composition of matter comprising fullerenes having a molecular weight less than that of C_{60} with the exception of C_{36}.

2. (Withdrawn) Composition of matter comprising fullerene C_{50}.

3. (Withdrawn) Composition of matter comprising fullerene C_{58}.

4. (Withdrawn) Composition of matter comprising fullerene C_{130}.

5. (Withdrawn) Composition of matter comprising fullerene C_{176}.

6. (Withdrawn) Isolated fullerene C_{50}.

7. (Withdrawn) Isolated fullerene C_{58}.

8. (Withdrawn) Isolated fullerene C_{130}.

9. (Withdrawn) Isolated fullerene C_{176}.

10. (Currently Amended) A product comprising fullerenes chemically bonded to a surface of a bulk carbon material wherein the average ~~surface area~~ fullerene concentration ~~of fullerenes~~ on the surface of the bulk carbon material is ~~greater than about 300~~ at least 87 molecules per ~~square micron~~ 1000 nanometers of perimeter.

11. (Previously Presented) The product of claim **10** wherein the fullerenes are selected from the group consisting of C_{50}, C_{58}, C_{60}, C_{130}, and, C_{176}, or any combination thereof.

12. (Previously Presented) The product of claim **11** wherein the bulk carbon material comprises carbon black particles.

13. (Previously Presented) The product of claim **12** wherein the fullerenes are each chemically bonded to carbon black by a carbon atom bridged to two carbon atoms of the fullerene and two carbon atoms of a carbon black particle.

14. (Withdrawn) Method for tethering a fullerene to a carbon material comprising:
adding functionalized fullerene to a liquid suspension containing carbon material;
drying the suspension to produce a powder; and
heat treating the powder.

15. (Withdrawn) The method of claim **14** wherein the functionalized fullerene is dichloromethano [60] fullerene.

16. (Withdrawn) The method of claim **14** wherein the functionalized fullerene is dibromomethano [60] fullerene.

17. (Withdrawn) The method of claim **14** further including sealing the powder in a tube filled with an inert gas.

18. (Withdrawn) The method of claim **17** wherein the tube is heat treated in a furnace.

19. (Withdrawn) The method of claim **18** wherein the tube is heat treated at approximately 400°C for 4.5 hours.

20. (Withdrawn) The method of claim **14** wherein the carbon material is a fullerene.

21. (Withdrawn) The method of claim **14** wherein the carbon material is a fullerene derivative.

22. (Withdrawn) The method of claim **21** wherein the fullerene derivative includes an endohedral fullerene.

23. (Withdrawn) The method of claim **21** wherein the fullerene derivative includes a metallized fullerene.

24. (Withdrawn) The method of claim **14** wherein the carbon material is a fullerenic nanostructure including single-walled and multi-walled carbon nanotubes.

25. (Withdrawn) The method of claim **14** wherein the carbon material is a nested or onion structure.

26. (Withdrawn) The method of claim **14** wherein the carbon material is spheroidal, ellipsoidal, trigonous-shaped fullerenic structures.

27. (Withdrawn) The method of claim **14** wherein the carbon material comprises single and multi-layered open cage structures having a range of radii of curvature.

28. (Withdrawn) The method of claim **14** wherein the carbon material is fullerenic soot.

29. (Withdrawn) The method of claim **14** wherein the carbon material is fullerenic black.

30. (Withdrawn) The method of claim **14** wherein the carbon material is graphitic carbon.

31. (Withdrawn) The method of claim **14** wherein the carbon material is diamond.

32. (Withdrawn) The method of claim **14** wherein the carbon material is diamond-like carbon.

33. (Withdrawn) The method of claim **14** wherein the carbon material is amorphous carbon.

34. (Withdrawn) The method of claim **14** wherein the functionalized fullerene contains a functional group selected to give the functionalized fullerene and a surface of the material to which it is tethered a desired property.

35. (Withdrawn) The method of claim **34** wherein the desired property is selected from the group consisting of acidic, basic, hydrophilic, hydrophobic, oxidizing, reducing, radical, metallic, electrical, magnetic, structural, chemical, biological, or physical properties.

36. (Withdrawn) The method of claim **14** further including use of chemical chains selected to achieve a desired tethered length.

37. (Withdrawn) The method of claim **14** further including use of chemical structures selected to achieve a desired tether stiffness.

38. (Withdrawn) The method of claim **37** wherein the chemical structures comprise alkane, alkene, alkyne, fused or cross-linked aromatic.

39. (Withdrawn) The method of claim **14** further including chemical structures selected to achieve a desired electrical conductivity.

40. (Withdrawn) Single-walled carbon nanotube having a diameter less than that of C_{60} and not associated with a three-dimensional support matrix.

41. (Previously Presented) The product of claim **10** wherein the fullerenes are each chemically bonded to the bulk carbon material by a carbon atom bridged to two carbon atoms of the fullerene and two carbon atoms of the bulk carbon material.

42. (Previously Presented) The product of claim **10**, wherein the size of the bulk carbon material is greater than about 10 nanometers.

43. (Previously Presented) The product of claim **10**, wherein the size of the bulk carbon material is greater than about 50 nanometers.

44. (Previously Presented) The product of claim **10**, wherein the size of the bulk carbon material is greater than about 100 nanometers.

45. (Previously Presented) The product of claim **10**, wherein the chemically bound fullerenes are derived from functionalized fullerenes.

46. (Previously Presented) The product of claim **10**, wherein the chemically bound fullerenes are derived from dichloromethano[60]fullerene.

47. (Cancel) The product of claim **10**, wherein the average surface area concentration is greater than about 500 molecules per square micron.

48. (Cancel) The product of claim **10**, wherein the average surface area concentration is greater than about 1000 molecules per square micron.

49. (Cancel) The product of claim **10**, wherein the average surface area concentration is greater than about 2000 molecules per square micron.

50. (Cancel) The product of claim **10**, wherein the average surface area concentration is greater than about 5000 molecules per square micron.

51. (Previously Presented) The product of claim **12**, wherein the size of the carbon black particle is greater than about 10 nanometers.

52. (Previously Presented) The product of claim **12**, wherein the size of the carbon black particle is greater than about 50 nanometers.

53. (Previously Presented) The product of claim **12**, wherein the size of the carbon black particle is greater than about 100 nanometers.

54. (Previously Presented) The product of claim **12**, wherein the chemically bound fullerenes are derived from functionalized fullerenes.

55. (Previously Presented) The product of claim **12**, wherein the chemically bound fullerenes are derived from dichloromethano[60]fullerene.

56. (Currently Amended) Fullerenic structures chemically bonded to a surface of a bulk carbon material wherein the ~~area~~ average fullerene concentration ~~of the fullerenic structures~~ on the surface of the bulk carbon material is ~~greater than~~ at least 87 molecules per 1000 nanometers of perimeter. ~~a value selected from the group consisting of: about 300 molecules per square micron, about 500 molecules per square micron, about 1000 molecules per square micron, about 2000 molecules per square micron, and about 5000 molecules per square micron~~.

57. (Previously Presented) The product of claim **56** wherein the chemically bound fullerenic structures are derived from functionalized fullerenes.

58. (Previously Presented) The product of claim **56** wherein the chemically bound fullerenic structures are derived from dichloromethano[60]fullerene.